WORK PROGRAM

TRANSPORTATION ASSET MANAGEMENT COUNCIL

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PREFACE

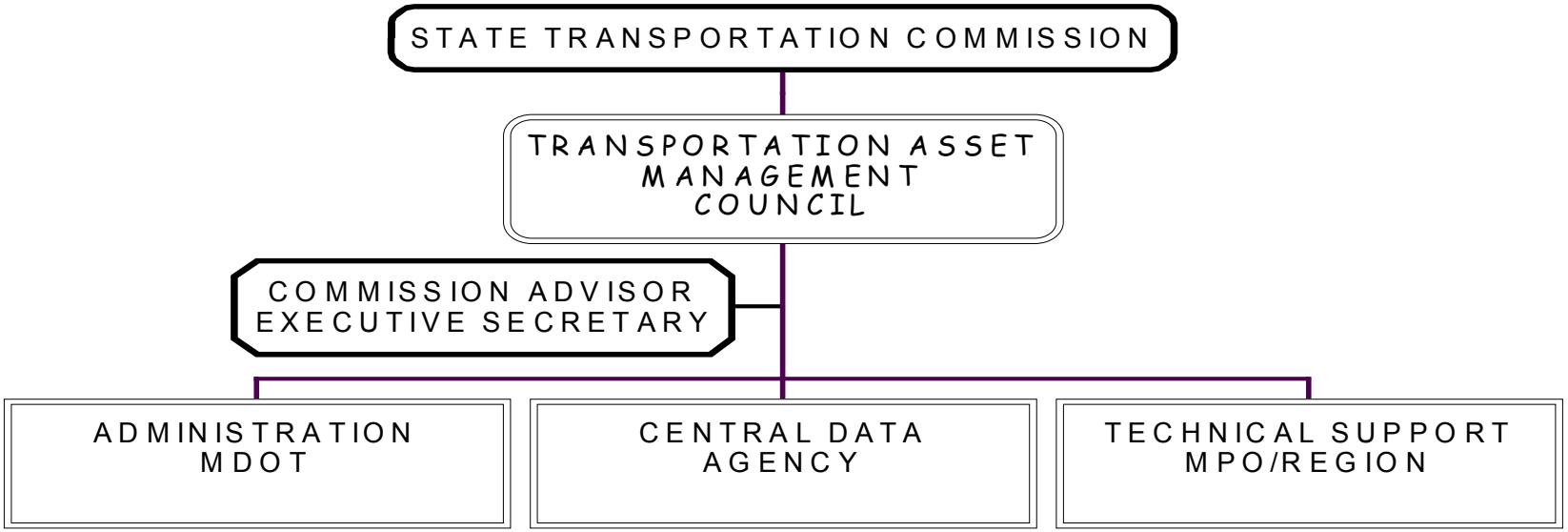
"The council shall develop and present to the state transportation commission for approval within 90 days after the date of the first meeting such procedures and requirements as are necessary for the administration of the asset management process. This shall at a minimum, include the areas of training, data storage and collection, reporting, development of a multi-year program, budgeting and funding, and other issues related to asset management that may arise from time to time. All quality control standards and protocols shall, at a minimum, be consistent with any existing federal requirements and regulations and existing government accounting standards." Section (5) of Public Act 499 of 2002

This document contains the required procedures listed above. Specific work items and activities that will be undertaken by the Transportation Asset Management Council in the fulfillment of their statutory responsibilities are **marked with an arrow and bold type**.

Approved by the Transportation Asset Management Council on January 8, 2003.

Approved by the State Transportation Commission on February 27, 2003.

Organization Chart



Council Committees

- **ADMINISTRATIVE**
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- **DATA MANAGEMENT**
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- **EDUCATION &. OUTREACH**
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- **STRATEGIC ANALYSIS**
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INTRODUCTION

A. BASIC PRINCIPLES OF ASSET MANAGEMENT

Asset management is an emerging concept in the transportation industry. This process is predicated on the principles of stewardship of public resources, accountability to users of the system, and continuous improvement. It is based on managing our infrastructure for results by focusing on performance. As stewards of the public's highways and bridges we can no longer be content to simply account for assets. Rather, we must aggressively ensure the proper use and performance of those assets.

Asset management provides a solid foundation which allows transportation professionals to monitor the transportation system. Further, it helps them plan how to best optimize the preservation, improvement and timely replacement of assets through cost-effective management, programming and resource allocation decisions.[1]

Asset management involves collecting physical plant inventory and managing current conditions based on strategic goals. It is a continuous, iterative process enabling managers to evaluate various scenarios, determine trade-offs between different actions, and select the best method for achieving specified goals. The major elements of an asset management process are:

- Establishing goals and objectives through development of a strategic plan,
- Collecting data to determine current pavement and bridge condition,
- Using management systems to control the various processes,
- Identifying standards and benchmarks,
- Developing appropriate performance measures,
- Making decisions based on these results and developing an appropriate program,
- Implementing the program, and
- Monitoring and reporting results of actions taken.

While asset management utilizes the outputs of pavement and bridge management systems it is much more than just another management system with a fancy name. The significant difference is that, in many respects, pavement and bridge management systems are used in a "tactical" manner, that is to identify specific projects. Asset management is a "strategic" approach that looks at the network as a whole rather than individual projects.

While individual road agencies will continue to use their existing systems for tactical, project-level decisions, the Transportation Asset Management Council (TAMC) will develop broad, network-level goals and objectives for the federal-aid eligible roads and bridges. The TAMC's process will **not** identify **what** projects need to be

[1] Asset Management Primer, USDOT/FHWA, Office of Asset Management, December 1999.

undertaken. Rather, it will identify areas of road and bridge deficiencies. It is up to the individual road agencies to develop the appropriate projects to meet those deficiencies.

The TAMC's process is intended to initially develop a strategy for maintaining, preserving, and improving Michigan's federal-aid eligible roads and bridges. Once this process has been fully established for the federal-aid eligible roads and bridges it is to be extended to all public roads.[2]

The strategy will focus on statewide targets for system condition. Further, the Council will provide a base line methodology for an asset management process. It will also indicate to decision-makers in the Legislature what it will cost to successfully achieve the strategy. While this process is not intended to identify projects it is anticipated that once the strategy has been developed and subsequently approved by the State Transportation Commission, the projects being scheduled for construction by individual road agencies will hopefully address the identified deficiencies.

The benefits of such an approach include:

- Taking a systematic approach to the entire network,
- Proactively managing rates of deterioration,
- Committing to do the right fix at the right time, and
- The ability to meet established network goals.

B. ACT 51 FUNDING STUDY COMMITTEE

So how did we get to this point? Act 308 of the Public Acts of 1998 created the Act 51 Transportation Funding Study Committee. This Committee was called upon to study transportation funding issues, to weigh information from affected agencies and interest groups, and to make recommendations for the future. After meeting for about 14 months, the Committee issued its final report, Transportation Funding for the 21st Century.

The Committee put forth numerous recommendations and challenged government leaders with the following vision:

> "In ten years Michigan will have the best multi-modal transportation system in North America as compared to other states and countries and as measured by customer satisfaction."[3]

[2] Act 499 of the Public Acts of 2002, Section 2.

[3] Transportation Funding for the 21st Century, Michigan Act 51 Transportation Funding Study Committee, June 1, 2000, p. 6.

The major recommendation coming from the Committee was that a long-range asset management process be established to manage Michigan's transportation infrastructure. The Committee went on to state:

> "In recommending the asset management approach, we are confident that it will take into account the importance of all roads and that they will be represented in equal respect regardless of ownership, according to their relative significance in the overall transportation system."[4]

Other key recommendations from the report were:

- That a "Technical Advisory Panel," made up of key transportation interests, be established to oversee the asset management process,
- That a system of performance measures, along with standards, be established for all elements of the roadway infrastructure, and
- That road and bridge data for all jurisdictions be collected and maintained in a statewide GIS and through the coordination of existing resources.[5]

The Committee's report was fundamental in the drafting of the legislation that resulted in the enactment of Act 499 of the Public Acts of 2002.

The vision espoused by the Committee, while laudable, is outside of the purview of the Council, as identified in the law. However, the vision of being the best at applying asset management principles is within its responsibilities and certainly attainable. And we can achieve this by benchmarking Michigan's efforts with the best of those throughout the world. Where appropriate, in this document, we will cite best management practices as the foundation for the actions being proposed by the TAMC. **Best management practices are identified with a check mark.**

C. "PILOT PROJECT"

While legislation was introduced in 2000 to implement many of the recommendations put forth by the Committee, the Legislature took no action. Subsequently, individuals from the Michigan Department of Transportation (MDOT) and county road commissions realized there was an opportunity to test the concepts proposed by the Committee.

Officials from the Genesee County Road Commission, MDOT, and the Genesee/Lapeer/Shiawassee Planning and Development Commission met in Flint to discuss the idea of a joint project in Genesee County. A Letter of Agreement was signed in April of 2001.

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[4] *Ibid,* p. 7.
[5] *Ibid.*

The idea was to develop and test working guidelines for collecting, storing, reviewing and analyzing roadway data for the federal-aid eligible system. Condition data would be collected using the Pavement Surface Evaluation and Rating System (PASER). The data collected was to be compatible with the RoadSoft pavement management software and the Michigan Information Center's "Framework" GIS transportation base map.[6]

The initial project proved to be valuable to both parties and the Letter of Agreement was expanded to include other counties. This document was signed by the directors of the County Road Association of Michigan and MDOT (see Appendix). The project included the following objectives:

- Evaluate the feasibility of using the PASER system for rating Michigan's road system,
- Determine the time and resources necessary to conduct road condition surveys,
- Evaluate procedures for mobile collection of road condition data using Geographic Information Systems (GIS) and Global Positioning Satellite systems (GPS),
- Appraise usage of the "Framework" files as a foundation for the GIS road map and database; and
- Promote working relationships between government agencies involved in transportation asset management activities.[7]

During 2002 seven additional counties have been rated under the auspices of the "pilot project". In November of 2002, the TAMC assumed official oversight of the "pilot project" process. This format has proven valuable as a means of testing the various activities included in an asset management process and it has received positive responses from those involved.

D. ACT 499 OF THE PUBLIC ACTS OF 2002

Building on the recommendations of the Act 51 Transportation Funding Study Committee and the "pilot project," CRAM and MDOT jointly developed a bill for consideration by the Legislature. Rep. Larry Julian introduced HB 5396 in the fall of 2001. The bill, after a few minor amendments passed the Michigan House of Representatives in December of 2001. The Senate added a couple of amendments and passed a substitute version in June of 2002. Governor John Engler signed the bill in July creating Act 499 of the Public Acts of 2002.

The law sets up an 11-member Transportation Asset Management Council (TAMC). The Council is comprised of professionals from county road commissions, cities, a county commissioner, a township official, regional and metropolitan planning

[6] "Letter of Agreement For Implementing Various Asset Management Concepts," April 20, 2001.
[7] "PASER Cooperative Road Condition Survey Demonstration Project," CRAM/MDOT, January 2002, p. 1.

organizations, and state transportation department personnel. The Council reports directly to the State Transportation Commission. The Commission's Advisor serves as the Secretary to the Council.

The law amended Section 9(a) of Act 51 of the Public Acts of 1951. It replaced the Act 51 Transportation Funding Study Committee with the newly created Council. It also replaced the traditional needs study process with a strategic asset management process. The law identified this process as an "on-going process of maintaining, upgrading, and operating physical assets cost-effectively, based on a continuous physical inventory and condition assessment."[8]

1. Mission Statement

The Council's mission is taken directly from Act 499 and states:

> "In order to provide a coordinated, unified effort by the various roadway agencies within the state, the transportation asset management council is hereby created within the state transportation commission and is charged with advising the commission on a statewide asset management strategy and the processes and necessary tools needed to implement such a strategy beginning with the federal-aid eligible highway system, and once completed, continuing on with the county road and municipal systems, in a cost-effective and efficient manner."[9]

2. Products and Reports

The law requires the TAMC to produce five different products and reports. They are:

- A work program (this document) within 90 days of its first meeting – Section (5),
- An asset management strategy, including the tools and procedures necessary to produce this strategy – Section (2),
- An annual report to be submitted to the State Transportation Commission and the Legislature by May 2nd of each year – Section (9),
- A multi-year program of projects expected to be built over the next three years. This program is to be published by October 1st of each year – Sections (7) and (1)(i), and
- An annual budget – implied by Section (8).

[8] Act 499 of the Public Acts of 2002, Section 9(a)(1)(a).
[9] *Ibid,* Section (2).

3. Roles and Responsibilities

Act 499 requires the Michigan Department of Transportation (MDOT) and the regional planning agencies and metropolitan planning organizations to carry out specific responsibilities.

Section (4) requires MDOT to provide qualified administrative staff to the Council. Personnel from the Bureau of Transportation Planning will primarily carry out this requirement. Section (9) requires that this staff prepare the Council's **ANNUAL REPORT**.

Section (4) also requires the state planning regions and metropolitan planning organizations to provide qualified "technical" assistance to the Council, although the law does not define what constitutes "technical" assistance.

4. Critical Principles

There are several critical principles within the law and from the Act 51 Transportation Funding Study Committee final report that will assist the way the Council approaches its responsibilities. They are:

- ✓ The methods employed are to be done in a cost-effective and efficient manner,
- ✓ Activities are to be consistent with existing federal regulations and current accounting practices, i.e., GASB 34,
- ✓ This is to be a coordinated, unified effort, and
- ✓ Wherever possible use existing resources.

The comments from several government leaders, on the passage of this unprecedented piece of legislation, illustrate the magnitude of the change that Act 499 is expected to have on the way Michigan deals with it's roads and bridges in the future.

Rep. Rick Johnson, Speaker, Michigan House of Representatives: "The state Legislature set up a table where all of the agencies responsible for roads and bridges can have a seat. The level of cooperation between agencies that could come from this is unprecedented. We all stand to benefit from this."

Barton W. LaBelle, Chair, State Transportation Commission: "This council will play a tremendously important role in bringing the maintenance of Michigan's roads and bridges in line with the motorists' viewpoint. The drivers don't care who owns a

road. They just want to drive on the best roads possible. This is going to help us get there."

Greg Rosine, Director, Michigan Department of Transportation: "This council will bring all agencies responsible for maintaining our roads to the table in a spirit of cooperation rather than contention and competition. We have taken a fundamental step toward serving Michigan drivers better, by viewing our road network as a single system rather than individual roads owned by individual agencies."

COUNCIL ADMINISTRATION

A. ROLES AND RESPONSIBILITIES

The Council has several specific responsibilities that are enumerated in Act 499. These include:

- Recommending an asset management strategy to the State Transportation Commission,
- Choosing the tools and procedures necessary for developing this strategy,
- Selecting a data agency, and
- Establishing procedures for collecting data and filing reports.

1. Recommend Asset Management Strategy

According to Act 499, asset management is a "strategic" process, which views the highway system in a coordinated, unified manner. A strategic asset management process:

- Sets goals and objectives for the system,
- Undertakes life-cycle cost analyses, and
- Recommends investment strategies that will prolong the system's useful service life.

The Council is charged with determining how to do this and proposing a strategy to the State Transportation Commission for formal adoption. **It is anticipated that it will take a minimum of three years before such a strategy can be recommended.** The reason for this is that the models used for developing such strategies generally need at least three years worth of data to develop the curves necessary to produce the trend lines.

2. Choose Tools and Procedures

The Council must also decide which tools and procedures will be employed in the development of this strategy. This will require:

- Selecting a condition assessment method,
- Determining the level and type of data that needs to be collected,
- Selecting a "predictability" model for assessing various strategies and revenue scenarios, and
- Developing a method to monitor progress from one year to the next.

➢ **In order for the rest of the asset management activities to begin, the Council will need to make decisions on these points, except the predictability model, during the first six months of 2003.**

3. Select a Data Agency

Section (1)© of Act 499 stipulates that a "central data storage agency" will be chosen by the Council for storing and maintaining data that is collected for the Council's asset management process. The law also provides that the agency chosen will have a non-voting seat on the Council.[10]

There are two ways that the Council can satisfy this requirement. The first is to develop a Request for Proposal (RFP) and seek various responses from universities and private firms to accomplish this objective. The second way would be to employ the recommendation of the Act 51 Transportation Funding Study Committee to use "existing resources" wherever possible.

There are several planning regions and metropolitan planning organizations that are currently collecting condition data for local road agencies within their jurisdictions. They are also collecting HPMS (Highway Performance Monitoring System) data and bridge data. By using the "existing resources" principle, the Council could have the regional planning agencies/MPOs coordinate the data collection process in their areas.

If this is the option the Council chooses it will likely require amending the existing contracts with the regional planning agencies/MPOs.

- **Staff, working with the Administrative Council, will review the existing contracts and report to the Council at their March 2003 meeting.**

4. Establish Data Collection and Reporting Procedures

Section (5) of Act 499 requires the Council to establish "procedures and requirements as are necessary for the administration of the asset management process."[11] This is to include procedures for the collection and storage of the data and any reporting requirements established in the law. These procedures and requirements must be consistent with "any existing federal requirements and regulations and existing government accounting standards."[12]

- **Within the first three months of 2003, staff, working with the Administrative Committee, will review and catalogue critical federal requirements relative to the asset management process and the requirements of GASB 34. Staff will report the results of their research at the April 2003 Council meeting.**

  In any asset management process, it is absolutely essential that clear procedures be developed and followed.

[10] Act 499 of the Public Acts of 2002, Sections (2) and (3)
[11] Act 499 of the Public Acts of 2002, Section (5)
[12] *Ibid.*

- ✓ "For all asset management systems, the importance of effective data administration cannot be over-emphasised [sic]. The connection between the data, the ownership of the data and a detailed description of the data must be correctly established and defined at the outset and maintained throughout the life of the system…Particular attention is required where data comes from sources outside the organisation [sic]. Management must make clear what information is required, which organisations [sic] are responsible and what data are to be supplied. The adoption of a structured approach will identify any gaps in the data and will highlight any data that are of inadequate quality."[13]

- ✓ "Data needs must be defined clearly and the accuracy and currency of data matched to the business needs and decision-making processes of the organisation [sic]. Data must be able to be gathered, verified, stored and retrieved, and protected. Data information should be distinguished from each other. Data is defined as recorded facts and figures, while information is knowledge derived from data."[14]

- ✓ "Procedures are important…so that users know how to operate the systems, what to do with the results, and what to do in the event of errors…Procedures should be documented fully."[15]

The Federal Highway Administration provides guidelines on the type of information that should be documented.

- ✓ "The analysis involves gathering all relevant information pertaining to the data:
  - Where the data come from and who collects the data
  - Method and frequency of collection
  - Reference system or system used
  - Structure, format, and size of the data
  - How the data are transmitted, processed, and stored
  - General quality of the data in terms of accuracy, completeness, recency, and redundancy
  - How the data are used…
  - Applications that draw data from the data bases…
  - Types of reports produced."[16]

It is a critical step in any asset management process to solicit stakeholder input. Also, numerous federal regulations require input from the public.

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[13] Asset Management For the Roads Sector, Organisation For Economic Co-operation and Development, 2001, p. 22.
[14] International Infrastructure Management Manual, Version 1.0, National Asset Management Steering Group, New Zealand/Australia, April 2000, p. 4.3.
[15] *Ibid.*
[16] Data Information Primer, USDOT/FHWA, p. 14.

- ✓ "The early involvement of key stakeholders in the process will enhance the successful implementation of AM [asset management] planning…One approach to external consultation is to prepare a focused public discussion document summarizing the key points of basic initial AM plans…."[17]

- **During the first half of 2003, staff will work with the Data Management Committee to develop a "procedures" manual to cover the areas of data collection, data accuracy, data storage, data reporting and analysis. Staff will present a draft to the Council at their May meeting. Upon receiving the go-ahead from the Council, staff will, with the cooperation and coordination from the regional planning agencies and MPOs hold a series of meetings with local road agencies and MDOT staff to solicit their input. A final document will be prepared and presented to the Council at their July meeting. Upon approval, this document will be distributed to all road agencies and regional planning agencies and MPOs.**

The Council is also required to develop "forms" for reporting the information necessary for the **ANNUAL REPORT** and **MULTI-YEAR PROGRAM**.[18] Cities and counties already submit several reports to MDOT. These include regular financial statements regarding expenditures of Act 51 funds; Act 51 road certification, HPMS data, and projects through the STIP/TIP process. It is the intent of the Council to make the reporting requirements of the new law as simple and easy for cities, counties and MDOT as possible.

- **During the first two months of 2003, staff will review existing reports to determine whether the Council can simply modify these reports in order to receive the required information or whether new forms will have to be developed. Staff will work with the Administration Committee regarding this issue and present the findings at the March 2003 Council meeting. Upon a decision of the Council, the staff will include a section to the procedures manual on reporting for the ANNUAL REPORT and MULTI-YEAR PROGRAM. This information will be included in the meeting held to solicit local input.**

B. ESTABLISH COUNCIL REPORTING ACTIVITIES

In addition to the reports required by the law, good management practices necessitate the regular reporting of Council activities.

- **The Council will, on a monthly basis, publish the official minutes of their meetings, on a web site for public inspection.**

- **On a quarterly basis, staff will provide a budget status report to the Council. Staff is currently developing a budget tracking system. This system will include expenses, budget balances, and number of staff hours being undertaken for**

[17] International Infrastructure Management Manual *op.cit.,* pp. 2.31-2.32.
[18] Act 499 of the Public Acts of 2002, Sections (7) and (9)

Council activities. The first report to the Council will be at the February 2003 meeting.

C. ASSUME JURISDICTION OF THE "PILOT PROJECT"

At their November 2002 meeting, the Council assumed leadership of the "pilot project" between the County Road Association of Michigan and the Michigan Department of Transportation. The Council will determine other possible "test" cases such as:

- Locating culverts and assessing drainage,
- Collecting the data necessary for "strategic" analyses which includes traffic volumes, truck traffic, and deterioration rates,
- Cost of collecting condition data on local roads (which is required by Act 499 once the federal-aid eligible process is well-established)

- **Staff will prepare a presentation on the results of the first stage of the "pilot project". The presentation will be made at the January 2003 Council meeting. The report will be presented at the March 2003 meeting.**

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DEVELOP AN ASSET MANAGEMENT STRATEGY

The mission of the Transportation Asset Management Council is to recommend to the State Transportation Commission a "strategy" for the federal-aid eligible highways and bridges in Michigan. The Council intends to develop an asset management strategy that is useful to state and local transportation agencies. This work program will concentrate on identifying and building the technical capacity to feed the development of this strategy. Over time, the work program will be modified to include additional work elements related to the development of the strategy. Initially the work program will focus on looking at such things as:

- What is the current condition of the system and what is the future condition of our system if we continue on the same path?
- What would the condition be if we altered our current practices?
- How can we maintain, preserve, or improve the system so that we get the maximum useful life out of a road or bridge?
- Should we use preventive maintenance fixes on the road or allow it to deteriorate to the point of having to reconstruct it? What are the costs and benefits of each decision?
- How do the alternatives relate to our identified goals and objectives?

There are many other questions that can be asked but essentially this step involves a conscious effort to come up with various alternatives and to develop the means to effectively analyze the impact of one course of action over another. Strategic analysis looks at the system in terms of "investments." It is this step that separates asset management from the more traditional approaches used in pavement and bridge management systems.

- ✓ "Asset management systems generally carry out the following data analyses:
  - Interpretation of the condition data collected on the individual assets.
  - Identification of 'optimal' treatments.
  - Calculation of life-cycle costs.
  - Prioritisation [sic] of maintenance treatments against budgets.

  Asset management generally examines such factors as investment levels, maintenance standards and economic importance, in terms of infrastructure management…."[19]

A. IDENTIFYING AND COLLECTING THE DATA

One of the most critical issues identified by the Act 51 Transportation Funding Study Committee was the fact that there was no uniform method for assessing the condition of Michigan's roads. There are plenty of methods being used from PASER to Micro-paver, to distress index, to international roughness index. While all of these methods are valuable they don't necessarily translate into a uniform rating system so that decision-makers can compare one road to the next. Act 499 solves this problem. The

[19] Asset Management For The Roads Sector, *op. cit.*, p. 23.

TAMC was specifically created to "provide a **coordinated, unified effort** by the various roadway agencies within the state".[20] (Emphasis added.)

- ✓ "The key to successful asset management is the collection of reliable and sufficient data about the asset, collating this data into information, and interpreting this information to obtain intelligence about the asset. To be valid and appropriate the data must be:
  - Relevant to the…decisions to be made.
  - Affordable and cost-effective so that regular collection and updating can be sustained.
  - Reliable and adequately accurate for the intended purposes.
  - Readily accessible and in a format suitable for those who need to manage and evaluate maintenance practices."[21]

The National Asset Management Steering Group identifies two additional best management practices:

- ✓ "The objective of data capture procedures is to ensure that:
  - there is economic value in all the data collected…
  - the correct data is collected
  - data is collected cost-effectively
  - the accuracy and completeness of data is known and meets user requirements and AM [asset management] system requirements."[22]

And:

- ✓ "The quality of data should be monitored rigorously at each stage of collection, entry and updating, to ensure user confidence in the information. Processes should be in place to track the source and accuracy of data, and formal audit procedures implemented to quantify the accuracy of data entered."[23]

- ➢ **Staff will work with the Data Management Committee to develop reporting and collection standards and will prepare a document for dissemination to Council constituents for input. The draft document will be available by April and the final document will be presented to the TAMC at their July 2003 meeting.**

- ➢ **Staff will work with the Data Management Committee to develop a survey to determine what methods of condition assessment are being used by the various road agencies. Results of the survey will be presented at the April 2003 TAMC meeting.**

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[20] Act 499 of the Public Acts of 2002, Section (2).
[21] State Highway Asset Management Manual, TRANSIT New Zealand, August 23, 2000, p. 45.
[22] International Infrastructure Management Manual, *op. cit.* p. 4.37.
[23] *Ibid*. p. 4.44.

- **Staff will continue to work with the Data Management Committee to determine the level of data that will be necessary to carry out the Council's legislative responsibilities. The results of this activity will be reported at the April 2003 TAMC meeting.**

- **Staff will work through the regional planning agencies/MPOs to review the data collection process. At the January 2004 meeting, staff will make a report to the Council regarding the results of the post-collection review.**

B. DETERMINE TOOLS AND PROCEDURES

Act 499 requires the Council to recommend a set of tools and procedures that will be needed to carry out the development of a statewide asset management strategy.[24] Typically, these tools and procedures include:

- Well-defined and agreed upon levels of service and performance standards,
- Accurate and timely data regarding the assets,
- Deterioration rates,
- A common location-referencing scheme,
- Optimization capability, and
- Life-cycle cost analysis or residual life determination[25]

1. Method of Condition Assessment

The first task in this effort is to determine what method of condition assessment the Council will use. There are many different methods available. While it has been presumed, through the "pilot project," that PASER would be the method for roadways, the Council is not bound to use PASER. The previous identified task of surveying road agencies regarding the methods currently being used will give the Council a good understanding of the variety of methods available. With regards to bridge data it is recommended that the Council use the data obtained in the National Bridge Inventory. This is the data that is currently used by road agencies and is submitted to MDOT for reporting to the Federal Highway Administration.

The Council must also decide what "platform" the data should be used to collect the data. During the "pilot project" data was collected using Maptitude and RoadSoft. Both proved effective.

- **Upon completion of the survey of local road methods, staff will work with the Data Management Committee and present to the Council a recommendation for both the condition assessment method and the platform by the May 2003 Council meeting.**

[24] Act 499 of the Public Acts of 2002, Section (2)
[25] International Infrastructure Management Manual, *op. cit.*

2. Technical Support

Act 499 requires the regional planning agencies and MPOs to provide "technical" support to the Council.[26] While the law does not specify the type of "technical" support that is to be given, the Council intends to rely on the regional planning agencies and MPOs for assistance in the collection of roadway and bridge data and the development of the multi-year programs for jurisdictions within their areas.

- **Staff will work with the Administrative Committee, the Board of Directors of the Michigan Association of Regions and the 3C Directors Association to develop the specific activities, which will be undertaken by the regional planning agencies and MPOs. A recommendation to the Council will be made at the April 2003 meeting.**

3. Strategic Model

There are several models and software, which allow for strategic analysis. Some of them include: dTIMS CT, PASERWARE, RoadSoft, HERS ST, Pontis, etc. Staff currently has a copy of each of these models. Each of them has distinct benefits. Before selecting a specific model from which the asset management strategy is derived, the Council should first test the various models.

- **The Council has established a Strategic Analysis Committee. This Committee will review and test the various models, and others that may be developed or available, and make a recommendation to the Council by the end of 2003. They will need to work closely with the Data Management Committee to ensure that the Council is collecting the data necessary to input into the models.**

4. Deterioration Rate

A critical aspect of any strategic analysis model is the development of deterioration rates.

- ✓ "Understanding the failure mode of an asset is critical to…strategic decision-making for that asset, or similar assets. An organisation [sic] must determine how an asset might fail to deliver required levels of service…If the critical failure mode for an asset can be determined, it is possible to target and refine maintenance plans, capital expenditure plans, and investigative activities, to address that failure."[27]

An understanding of the deterioration rate is necessary for complete asset valuation.[28]

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[26] Act 499 of the Public Acts of 2002, Section(4)
[27] International Infrastructure Management Manual, *op. cit.*, p. 3.61.
[28] Measuring and Reporting Highway Asset Value, Condition and Performance, Transportation Association of Canada, 2001, p. 23.

- ✓ "The [condition] ratings are incorporated into predictive decay models that establish effective remaining life for management purposes and project timing of future expenditures based on recommended treatment options…The decay models use an algorithm to convert these indicators to a condition rating and predict remaining life and/or expenditure timing. These models incorporate treatment options and costs."[29]

- ✓ "Many factors, other than condition, may contribute to the decline in useful life of an asset. Using roads as an example, these factors would include:
  - traffic-dependent factors such as traffic volume and axle weight loadings
  - environmental factors such as climatic conditions and geological conditions
  - technical and commercial obsolescence
  - exceeding capacity.

  In contrast, proper and regular maintenance programmes [sic] could extend useful life."[30]

- ✓ "Prepare a decay curve using historical condition and failure records…Where suitable records are not available, a decay curve can be developed using the opinion of asset managers and operators with experience in managing the assets."[31]

- ➢ **The Strategic Analysis Committee will begin working with groups of engineers from various road agencies throughout the state to develop "Michigan-specific" deterioration rates of specific fixes. This activity should begin during 2003 and continue for future years as it often takes many years to determine the rate of deterioration.**

Eventually it should be possible to construct "regional" deterioration rates based on the specific factors within that area.

5. Optimization

Another critical function of a strategic analysis process is the ability to determine optimal funding scenarios.

- ✓ Optimization "is an economic evaluation process that is used to:
  - identify all available options
  - carry out a benefits-cost analysis of all options such that all benefits are assessed equally, e. g. risk exposure, probability of failure, life extension
  - adopt the most cost-effective options in terms of the total business picture using net present value (NPV) analysis, with risk reduction to the business considered as a benefit."[32]

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[29] International Infrastructure Management Manual, *op. cit.*, p. 3.54.
[30] *Ibid.,* p. 3.122.
[31] *Ibid*., p. 3.87.
[32] *Ibid.*, p. 3.82.

- ✓ "Optimisation [sic] techniques will be applied to investigate: the effect of different budget levels on future network condition…."[33]

6. Location Referencing

The final element that is necessary in this process is the use of a common location-referencing scheme.

- ✓ "This standard allows for queries of which assets are present in a given location or network segment, and provides a unified basis for data input, display, and reporting."[34]

The state has developed a single GIS base map, commonly known as the "Framework." This is the base map that has been utilized in the "pilot project", and is part of RoadSoft. The Framework uses a common reference scheme called PR/mile point.

- ➢ **Employing the principle of "utilizing existing resources," the Council will use the Framework for any GIS/mapping activities and the PR/mile point referencing scheme for locating all assets. All data that is collected should be able to be linked to the Framework. Throughout the year staff will work with the Data Management Committee to test this application.**

C. DEFINE STRATEGIC GOALS & PERFORMANCE MEASURES

Selecting key goals and objectives and identifying performance measures or indicators are central tasks in assessing the progress of an organization.[35]

- ✓ "Performance measures are used to establish targets against which the performance of infrastructure assets, in delivering service and business efficiency, can be measured. Performance measures should be:
  - meaningful to customers and written in a manner which they can understand easily
  - transparent, giving a clear picture of performance for each service or activity
  - easily measurable in a cost-effective way
  - consistent with industry benchmarks
  - translatable through to business plans and staff work plans
  - consistent with legal obligation relating to an output or activity
  - useful as a management tool."[36]

[33] State Highway Asset Management Manual, *op. cit.,* p. 74.
[34] "Draft Phase 1 Report – Task 2 Asset Management Framework," Cambridge Systematics Inc., NCHRP20-24(11)A, September 2001, pp. 4-7 and 4-8.
[35] Measuring and Improving Infrastructure Performance, National Research Council, 1995.
[36] International Infrastructure Management Manual, *op. cit.* p. 3.10.

- ✓ "Every effort should be made to develop performance measures which will be consistent over time so that progress and trends can be tracked. Long-term targets should be included where relevant, and performance measures set which reflect the progress to be achieved annually."[37]

- ➢ **Staff will conduct a literature search on existing performance measures and develop a "candidate" list of measures for review and recommendation by the Strategic Analysis Committee. This activity will begin in the first quarter of 2003. The Strategic Analysis Committee will work closely with the Data Management Committee in this effort.**

When selecting performance measures, it is absolutely critical that key stakeholder input is solicited and received.

- ✓ "Performance measures…must provide to *all stakeholders*, a *balanced view* of the overall *efficiency and effectiveness* of the transportation system, in terms of a full range of *transportation values*, in a way that is *objective and economical*."[38]

- ✓ "Involve operational staff in the development of performance measures, and record precisely the audit trails for monitoring actual performance."[39]

- ✓ And the Act 51 Transportation Funding Study Committee stated: "The Committee recommends that system performance measures, along with associated standards and criteria, be selected by the Technical Advisory Panel for all elements of the roadway infrastructure.
  - *Measuring the performance* of the system components is the essential element of any asset management process…
  - Performance measures should reflect expectations based on a road's relative significance in the overall transportation system, in other words, how the road is used or functions.
  - Performance expectations for higher function facilities – regardless of jurisdiction – should be set to a higher standard."[40]

- ➢ **Before making a final recommendation to the Council, the Strategic Analysis and Education & Outreach Committees will conduct a workshop on condition and performance goals and measures with local and state regional road offices.**

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[37] *Ibid.,* p. 3.16.
[38] Measuring and Reporting Highway Asset Value, Condition and Performance, *op. cit.,* p. vi.
[39] International Infrastructure Management Manual, *op. cit.,* p. 3.16.
[40] Transportation Funding for the 21st Century, *op.cit.*, p. 10.

D. UNDERSTANDING FUNCTIONAL CLASSIFICATION, LEVEL OF SERVICE AND SYSTEM USAGE

Because we are dealing with the federal-aid eligible system it is important to have a working knowledge of what constitutes an "arterial" road and a "collector" road. These are terms that are used in the "National Functional Classification," (NFC).

NFC is a method for classifying all roads according to their "function." Functional classification characterizes every road as to whether it primarily provides mobility or access to property or some combination of the two. Functional classification consists of deciding where a road falls along the mobility/access spectrum.

Principal arterials provide the greatest mobility. These roads generally carry long distance, through-travel movements. They connect major cities and also provide access to important traffic generators such as major airports or regional employment centers.

Minor arterials are similar in function to principal arterials, except they carry trips of shorter distance and to lesser traffic generators.

Collectors tend to be balanced in providing mobility and access to property. Collectors also funnel traffic from residential or rural areas to arterials.

Local roads primarily provide access to property.

The Act 51 Transportation Funding Study Committee "recommends that a systematic, statewide review of National Functional Classification (NFC) designations be conducted according to their use, per federal guidelines."[41] They went on to say:

- ✓ "As a key element in utilizing the asset management process for attaining system performance expectations, it is essential that every road segment in Michigan have the *functional classification* which reflects its up-to-date use and significance within the overall transportation system."[42]

Federal law assigns MDOT the primary responsibility "for developing and updating a statewide highway functional classification in rural and urban areas to determine functional usage of the existing roads and streets…The state shall cooperate with responsible local officials…in developing and updating the functional classification."[43]

- ➢ **During the first quarter of 2003, staff will make a presentation to the Council on functional class principles, plans for updating, and characteristics of the current system.**

[41] *Ibid.,* p. 11.
[42] *Ibid.*
[43] 23 CFR 470A(b)(1)

- **Staff will work with the Strategic Analysis Committee to develop preliminary standards and service levels for the various components of the federal-aid eligible system.**

E. DEVELOP INVESTMENT SCENARIOS

The final element to developing the strategy will be to develop a variety of investment scenarios that can be tested in order to select the most optimal one.

- **Staff will work with the Strategic Analysis Committee to develop investment scenarios to test in the strategic models.**

F. TRAINING

Throughout the asset management process it is of critical importance to have trained individuals conducting the data collection, analyzing the data, running the strategic analysis, etc. (A copy of the "work plan for data collection" used in the "pilot project," is contained in the Appendix for information purposes.) The Council will need to determine and establish training procedures and to conduct the training sessions.

- **In order for training to occur prior to the collection of data beginning in August of 2003, training procedures will need to be in place by April. Staff will work with Administrative Committee to develop these procedures and present it to the Council at their March meeting.**

PRODUCE AN ANNUAL BUDGET

One of the key provisions of Act 499 is that funding for the activities required in the Act is to be made by an annual appropriation from the Michigan Transportation Fund to the State Transportation Commission.[44] The process that must be followed for this to happen is:

- **By July of each year the Council must approve a draft budget and submit it to the State Transportation Commission for approval.**

- **Upon approval by the Commission the Council's budget will be submitted to the Department of Management of Budget (DMB) for inclusion with MDOT's budget request.**

Budgets for Fiscal Year 2003 and 2004 have been prepared and approved by the Commission. The FY 2003 budget has been approved by the Legislature as a supplemental appropriation while the FY 2004 budget has been submitted to DMB. These two budgets are contained in the Appendix.

The current budget was developed using cost estimates obtained from the "pilot project" and MDOT activities. An explanation of the cost estimates is also contained in the Appendix.

In order to keep the Council informed of expenses being incurred for various Council activities, the following actions will be taken:

- **Staff will develop a cost monitoring system that will track expenditures against the various budget categories. The Council Secretary will be responsible for monitoring spending and will submit to the Council and the Commission a quarterly budget status report.**

- **Staff will also track costs on any additional test cases that the Council may choose to initiate. Upon completion of these tests a full report on the cost of the activities will be given to the Council. One of the key test cases that will need to be initiated during the next several years will be to ascertain the cost of collecting condition data on local roads.**

- **Staff will also produce forms for keeping track of the costs of collecting the condition data. Each group collecting the data will be expected to keep accurate cost data and submit reports to the Executive Secretary on a regularly scheduled basis. Staff will work with the Administrative Committee to develop this process and include it in the procedures manual before the collection of data begins in August of 2003.**

[44] Act 499 of the Public Acts of 2002, Section (8).

PRODUCE AN ANNUAL REPORT

Act 499 requires: "An annual report shall be prepared by the staff assigned to the council regarding the results of activities conducted during the preceding year and the expenditure of funds related to the processes and activities identified by the council. The report shall also include an overview of the activities identified for the succeeding year."[45]

Section (9) also requires MDOT and local road agencies to "keep accurate and uniform records on all road and bridge work performed and funds expended for the purposes of this section, according to the procedures developed by the council. Each local road agency and the department shall annually report to the council the mileage and condition of the road and bridge system under their jurisdiction and the receipts and disbursements of road and street funds in the manner prescribed by the council, which shall be consistent with any current accounting procedures."[46]

This report is due to the Legislature and the State Transportation Commission by May 2 of each year.

In order to fulfill this statutory requirement the Council needs to conduct the following tasks:

- **Staff will review the current reporting forms filed by cities and counties regarding Act 51 activities to ascertain if it is possible to "piggy-back" Council reporting requirements with these other reports. Staff will report to the Administrative Committee in February the results of their findings and to the Council at their March meeting.**

- **During the months of January and February, the Administrative Committee will need to:**
  - **•Develop procedures, forms, and deadlines for reporting the information to the Council,**
  - **•Establish work programs with the regional planning agencies and metropolitan planning organizations, and**
  - **•Develop standardized graphic presentations of current condition.[47]**

- **Once these activities are finished and the Council has approved the Administrative Committee's recommendations, the procedures need to be included in the "procedures" manual and distributed to local road agencies and MDOT for review and comment.**

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[45] Act 499 of the Public Acts of 2002, Section (9).
[46] *Ibid.*
[47] This is necessary so that every road agency will know how the data that is being reported is going to be utilized.

Because of the tight timetable facing the Council this year, the first annual report will focus primarily on the data collected through the various "pilot project" efforts and current state trunk line data, which has been rated using the same methodology as in the "pilot project."

PRODUCE A MULTI-YEAR PROGRAM

Another major report required by Act 499 is the development of a "multi-year" program that must be published each year by October 1.[48] This document is to contain a list of projects that are being funded with state or federal funds for the next three years. Again it is the intent of the Council to work through the regional planning agencies and metropolitan planning organizations to accomplish this requirement.

- **During the first six months of 2003, the Administrative Committee will meet with the Michigan Association of Regions Board of Directors and the 3C Directors Association to develop guidelines for the assimilation of these projects and subsequent reporting methods. This will include:**
  - **•Reviewing existing federal procedures related to the STIP/TIP process,**
  - **•Establishing work programs with the regional planning agencies and MPOs,**
  - **•Developing forms for reporting, and**
  - **•Establishing review procedures and deadlines for submitting information to the Council.**

- **Once these activities are finished and the Council has approved the Administrative Committee's recommendations, the procedures need to be included in the "procedures" manual and distributed to local road agencies and MDOT for review and comment.**

[48] Act 499 of the Public Acts of 2002, Section (7).

DEVELOP A PUBLIC INFORMATION PROGRAM

The Council is cognizant of the fact that Act 499 substantially changes the way we approach maintaining our highway and bridge system. One of the key objectives of this effort is for all road agencies to approach their respective responsibilities in a spirit of cooperation. Without a regular, consistent public information program misinformation and misinterpretation can occur regarding what is trying to be accomplished by this effort.

It is the intent of the Council to make every effort to keep state and local road agencies, key stakeholders, and the general public informed of the activities being conducted and the results of those activities. In order to achieve this the Council will:

- **Establish an Education and Outreach Committee whose responsibility is to ensure that Council activities and requirements are being effectively communicated to various groups interested in the welfare of our highways and bridges.**

- **The Education and Outreach Committee, working through the regional planning agencies/MPOs, will, during the spring of 2003, hold a series of meetings around the state to explain the requirements of Act 499 and the procedures being developed by the Council.**

- **The Education and Outreach Committee, by March of 2003, will work to develop a web site and newsletter so that interested parties can have access to Council minutes, budget, proposals, activities, etc.**

- **The Council will provide monthly reports to the State Transportation Commission, the County Road Association of Michigan, the Michigan Municipal League, the Michigan Department of Transportation, the Michigan Association of Regions, the 3C Board of Directors, the Michigan Association of Counties and the Michigan Townships Association. This will be the responsibility of the Council Secretary with the Education & Outreach Committee providing oversight.**

- **The Council will provide quarterly reports to key stakeholders such as the member agencies represented on the Council, the Michigan Chamber of Commerce, Michigan Road Builders Association, Michigan Manufacturer's Association, Michigan Farm Bureau and others.**

- **The Council will work to establish a GASB 34 clearinghouse where local agencies can link to resources describing the requirements of GASB 34.**

WORK PROGRAM BREAKDOWN

1. January through February 2003

- **COUNCIL APPROVES WORK PROGRAM AND SUBMITS TO STATE TRANSPORTATION COMMISSION.**

- During the months of January and February, the Administrative Committee will need to:
  - Develop procedures, forms, and deadlines for reporting the information to the Council,
  - Establish work programs with the regional planning agencies and metropolitan planning organizations, and
  - Develop standardized graphic presentations of current condition.

- Staff will review the current reporting forms filed by cities and counties regarding Act 51 activities to ascertain if it is possible to "piggy-back" Council reporting requirements with these other reports. Staff will report to the Administrative Committee in February the results of their findings.

- Staff will prepare a presentation on the results of the first stage of the "pilot project". The presentation will be made at the January 2003 Council meeting.

- On a quarterly basis, staff will provide a budget status report to the Council. Staff is currently developing a budget tracking system. This system will include expenses, budget balances, and number of staff hours being undertaken for Council activities. The first report to the Council will be at the February 2003 meeting.

- Staff will conduct a literature search on existing performance measures and develop a "candidate" list of measures for review and recommendation by the Strategic Analysis Committee. This activity will begin in the first quarter of 2003. The Strategic Analysis Committee will work closely with the Data Management Committee in this effort.

- Staff will work with the Strategic Analysis Committee to develop investment scenarios to test in the strategic models.

2. March 2003

- During the first six months of 2003, the Administrative Committee will meet with the Michigan Association of Regions Board of Directors and the 3C Directors Association to develop guidelines for the assimilation of these projects and subsequent reporting methods. This will include:
  - Reviewing existing federal procedures related to the STIP/TIP process,
  - Establishing work programs with the regional planning agencies and MPOs,

- Developing forms for reporting, and
- Establishing review procedures and deadlines for submitting information to the Council.

- Staff will prepare a report on the results of the first stage of the "pilot project". The report will be presented at the March 2003 meeting.

- Staff will work with the Education & Outreach Committee to develop an on-going public information program. Staff will present the program at the March Council meeting.

- The Education and Outreach Committee, by March of 2003, will work to develop a web site and newsletter so that interested parties can have access to Council minutes, budget, proposals, activities, etc.

- Staff, working with the Administrative Council will review the regional planning agency/MPO contracts and report to the Council at their March 2003 meeting.

- During the first two months of 2003, staff will review existing reports to determine whether the Council can simply modify these reports in order to receive the required information or whether new forms will have to be developed. Staff will work with the Administration Committee regarding this issue and present the findings at the March 2003 Council meeting. Upon a decision of the Council, the staff will add a section to the procedures manual on reporting for the **ANNUAL REPORT** and **MULTI-YEAR PROGRAM**. This information will be included in the meeting held to solicit local input.

- During the first quarter of 2003, staff will make a presentation to the Council on functional class principles, plans for updating, and characteristics of the current system.

- In order for training to occur prior to the collection of data beginning in August of 2003, training procedures will need to be in place by April and training will need to begin in June and July. Staff will work with Administrative Committee to develop these procedures and present it to the Council at their March meeting.

- Staff will present the draft of the first **ANNUAL REPORT** to the Council for their review.

3. <u>April 2003</u>

- Within the first three months of 2003, staff, working with the Administrative Committee, will review and catalogue critical federal requirements relative to the asset management process and the requirements of GASB 34. Staff will report the results of their research at the April 2003 Council meeting.

- Staff will work with the Data Management Committee to develop a survey to determine what methods of condition assessment are being used by the various road agencies. Results of the survey will be presented at the April 2003 TAMC meeting.

- Staff will continue to work with the Data Management Committee to determine the level of data that will be necessary to carry out the Council's legislative responsibilities. The results of this activity will be reported at the April 2003 TAMC meeting.

- Staff will work with the Data Management Committee to develop reporting and collection standards and will prepare a document for dissemination to Council constituents for input. The draft document will be available by April.

- The Education and Outreach Committee, working through the regional planning agencies/MPOs, will, during the spring of 2003, hold a series of meetings around the state to explain the requirements of Act 499 and the procedures being developed by the Council.

- Staff will work with the Administrative Committee, the Board of Directors of the Michigan Association of Regions and the 3C Directors Association to develop the specific activities, which will be undertaken by the regional planning agencies and MPOs. A recommendation to the Council will be made at the April 2003 meeting.

- **ANNUAL REPORT** must be approved by the Council to meet the May 2nd legislative requirement.

4. <u>May 2003</u>

- During the first half of 2003, staff will work with the Data Management Committee to develop a "procedures" manual to cover the areas of data collection, data accuracy, data storage, data reporting and analysis. Staff will present a draft to the Council at their May meeting. Upon receiving the go-ahead from the Council, staff will, with the cooperation and coordination from the regional planning agencies and MPOs hold a series of meetings with local road agencies and MDOT staff to solicit their input. A final document will be prepared and presented to the Council at their July meeting. Upon approval, this document will be distributed to all road agencies and regional planning agencies and MPOs.

- Staff will work with the Data Management Committee to develop reporting and collection standards and will prepare a document for dissemination to Council constituents for input. The final document will be presented to the TAMC at their May 2003 meeting.

- Upon completion of the survey of local road methods, staff will work with the Data Management Committee and present to the Council a recommendation for both the condition assessment method and the platform by the May 2003 Council meeting.

- **ANNUAL REPORT MUST BE SUBMITTED TO THE LEGISLATURE AND STATE TRANSPORTATION COMMISSION.**

5. June 2003

- Training for the data collection process should begin.

- Staff will also produce forms for keeping track of the costs of collecting the condition data. Each group collecting the data will be expected to keep accurate cost data and submit reports to the Executive Secretary on a regularly scheduled basis. Staff will work with the Administrative Committee to develop this process and include it in the procedures manual before the collection of data begins in August of 2003.

6. July 2003

- By July of each year the Council must approve a draft budget and submit it to the State Transportation Commission for approval.

- Training for the data collection process continues, as needed.

- During the first four months of 2003, staff will work with the Administration Committee to develop a "procedures" manual to cover the areas of data collection, data accuracy, data storage, data reporting and analysis A final document will be prepared and presented to the Council at their July meeting. Upon approval, this document will be distributed to all road agencies and regional planning agencies and MPOs.

7. August 2003

- Collection of road condition data begins.

- Projects for the **MULTI-YEAR PROGRAM** should be reported to the regional planning agencies and MPOs. Upon completion of the lists, they need to be sent to the TAMC for inclusion in the **MULTI-YEAR PROGRAM**.

8. September 2003

- Staff will present the **MULTI-YEAR PROGRAM** to the Council.

9. October 2003

- The Strategic Analysis Committee should begin working with groups of engineers from various road agencies throughout the state to develop "Michigan-specific" deterioration rates of specific fixes. This activity should begin during 2003 and continue for future years as it often takes many years to determine the rate of deterioration.

- **COUNCIL PUBLISHES FIRST MULTI-YEAR PROGRAM.**

10. November 2003

11. December 2003

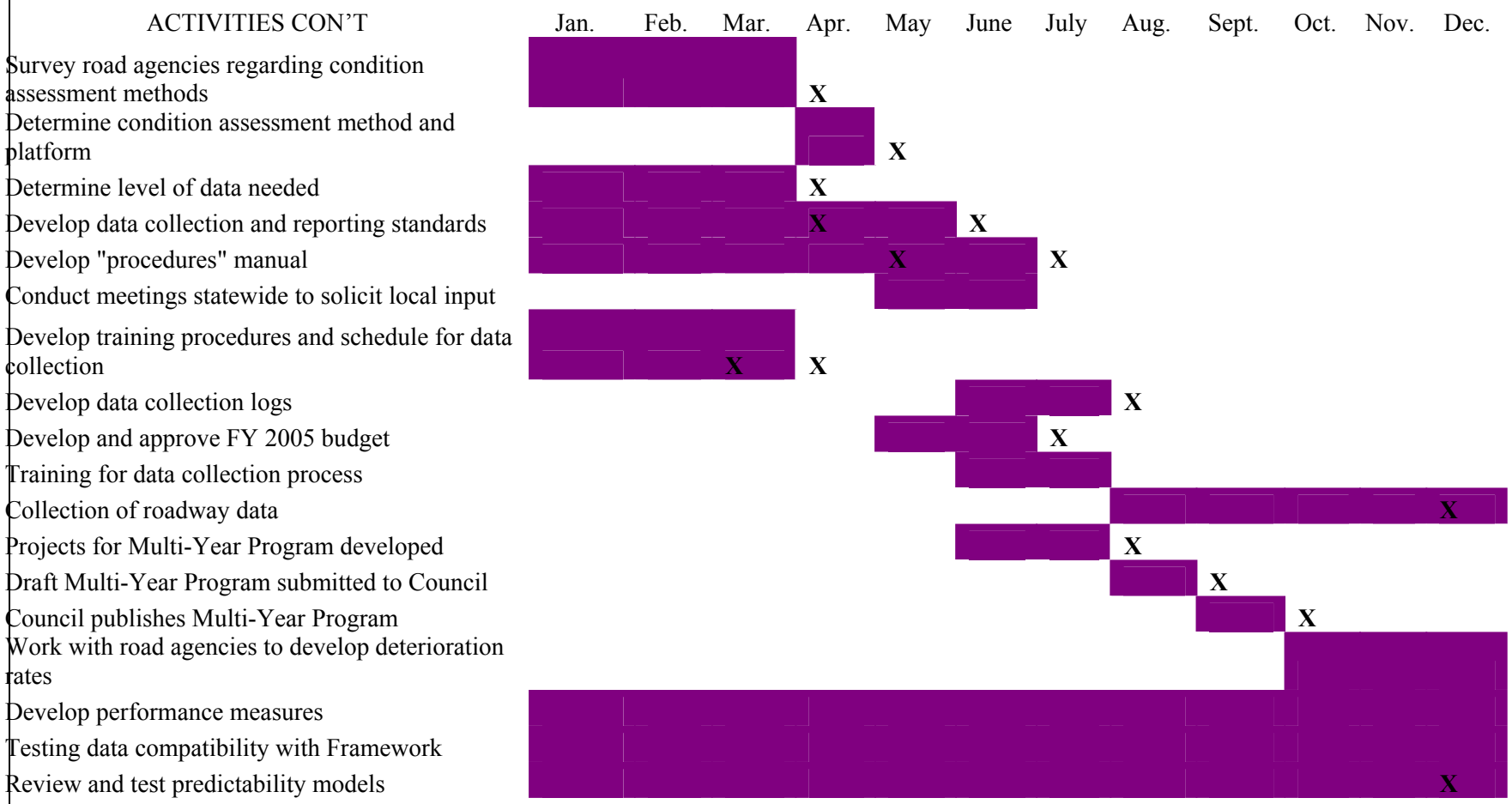
- The Council has established a Strategic Analysis Committee. This Committee should review and test the various models, and others that may be developed or available, and make a recommendation to the Council by the end of 2003. They will need to work closely with the Data Management Committee to ensure that the Council is collecting the data necessary to input into the models.

- Staff will work through the regional planning agencies/MPOs to review the data collection process. At the January 2004 meeting, staff will make a report to the Council regarding the results of the post-collection review.

2003 COUNCIL WORK PROGRAM

ACTIVITIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pilot Project Presentation	X											
Submit Work Program to State Transportation Commission	X											
Budget Status Report		X		X			X			X		
Develop on-going public information program			X									
Provide monthly reports to Transportation Commission and Council agencies		X	X	X	X	X	X	X	X	X	X	X
Provide quarterly reports to key stakeholder groups				X			X			X		
Report on Pilot Project			X									
Presentation on National Functional Classification			X									
Develop DRAFT of first Annual Report			X									
Approve Annual Report				X								
Develop web site and newsletter			X									
Review Current Reporting Requirements and Forms		X	X									
Develop procedures, forms, and deadlines for reporting					X							
Review existing contracts with regions/MPOs			X									
Establish work activities with regions/MPOs				X		X						
Review existing federal regulations & GASB 34				X								

2003 COUNCIL WORK PROGRAM



APPENDIX

STATE OF MICHIGAN
91ST LEGISLATURE
REGULAR SESSION OF 2002

Introduced by Rep. Julian

ENROLLED HOUSE BILL No. 5396

AN ACT to amend 1951 PA 51, entitled "An act to provide for the classification of all public roads, streets, and highways in this state, and for the revision of that classification and for additions to and deletions from each classification; to set up and establish the Michigan transportation fund; to provide for the deposits in the Michigan transportation fund of specific taxes on motor vehicles and motor vehicle fuels; to provide for the allocation of funds from the Michigan transportation fund and the use and administration of the fund for transportation purposes; to set up and establish the truck safety fund; to provide for the allocation of funds from the truck safety fund and administration of the fund for truck safety purposes; to set up and establish the Michigan truck safety commission; to establish certain standards for road contracts for certain businesses; to provide for the continuing review of transportation needs within the state; to authorize the state transportation commission, counties, cities, and villages to borrow money, issue bonds, and make pledges of funds for transportation purposes; to authorize counties to advance funds for the payment of deficiencies necessary for the payment of bonds issued under this act; to provide for the limitations, payment, retirement, and security of the bonds and pledges; to provide for appropriations and tax levies by counties and townships for county roads; to authorize contributions by townships for county roads; to provide for the establishment and administration of the state trunk line fund, critical bridge fund, comprehensive transportation fund, and certain other funds; to provide for the deposits in the state trunk line fund, critical bridge fund, comprehensive transportation fund, and certain other funds of money raised by specific taxes and fees; to provide for definitions of public transportation functions and criteria; to define the purposes for which Michigan transportation funds may be allocated; to provide for Michigan transportation fund grants; to provide for review and approval of transportation programs; to provide for submission of annual legislative requests and reports; to provide for the establishment and functions of certain advisory entities; to provide for conditions for grants; to provide for the issuance of bonds and notes for transportation purposes; to provide for the powers and duties of certain state and local agencies and officials; to provide for the making of loans for transportation purposes by the state transportation department and for the receipt and repayment by local units and agencies of those loans from certain specified sources; and to repeal acts and parts of acts," by amending section 9a (MCL 247.659a), as amended by 1998 PA 308.

The People of the State of Michigan enact:

Sec. 9a. (1) As used in this section:

(a) "Asset management" means an ongoing process of maintaining, upgrading, and operating physical assets cost-effectively, based on a continuous physical inventory and condition assessment.

(b) "Bridge" means a structure including supports erected over a depression or an obstruction, such as water, a highway, or a railway, for the purposes of carrying traffic or other moving loads, and having an opening measuring along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme

ends of openings for multiple boxes where the clear distance between openings is less than 1/2 of the smaller contiguous opening.

(c) "Central storage data agency" means that agency or office chosen by the council where the data collected is stored and maintained.

(d) "Council" means the transportation asset management council created by this section.

(e) "County road commission" means the board of county road commissioners elected or appointed pursuant to section 6 of chapter IV of 1909 PA 283, MCL 224.6, or, in the case of a charter county with a population of 2,000,000 or more with an elected county executive that does not have a board of county road commissioners, the county executive for ministerial functions and the county commission provided for in section 14(1)(d) of 1966 PA 293, MCL 45.514, for legislative functions.

(f) "Department" means the state transportation department.

(g) "Federal-aid eligible" means any public road or bridge that is eligible for federal aid to be spent for the construction, repair, or maintenance of that road or bridge.

(h) "Local road agency" means a county road commission or designated county road agency or city or village that is responsible for the construction or maintenance of public roads within the state under this act.

(i) "Multiyear program" means a compilation of road and bridge projects anticipated to be contracted for by the department or a local road agency during a 3-year period.

(j) "State planning and development regions" means those agencies required by section 134(b) of title 23 of the United States Code, 23 U.S.C. 134, and those agencies established by Executive Directive 1968-1.

(2) In order to provide a coordinated, unified effort by the various roadway agencies within the state, the transportation asset management council is hereby created within the state transportation commission and is charged with advising the commission on a statewide asset management strategy and the processes and necessary tools needed to implement such a strategy beginning with the federal-aid eligible highway system, and once completed, continuing on with the county road and municipal systems, in a cost-effective, efficient manner. Nothing in this section shall prohibit a local road agency from using an asset management process on its non-federal-aid eligible system. The council shall consist of 10 voting members appointed by the state transportation commission. The council shall include 2 members from the county road association of Michigan, 2 members from the Michigan municipal league, 2 members from the state planning and development regions, 1 member from the Michigan townships association, 1 member from the Michigan association of counties, and 2 members from the department. Nonvoting members shall include 1 person from the agency or office selected as the location for central data storage. Each agency with voting rights shall submit a list of 2 nominees to the state transportation commission from which the appointments shall be made. The Michigan townships association shall submit 1 name, and the Michigan association of counties shall submit 1 name. Names shall be submitted within 30 days after the effective date of the 2002 amendatory act that amended this section. The state transportation commission shall make the appointments within 30 days after receipt of the lists.

(3) The positions for the department shall be permanent. The position of the central data storage agency shall be nonvoting and shall be for as long as the agency continues to serve as the data storage repository. The member from the Michigan association of counties shall be initially appointed for 2 years. The member from the Michigan townships association shall be initially appointed for 3 years. Of the members first appointed from the county road association of Michigan, the Michigan municipal league, and the state planning and development regions, 1 member of each group shall be appointed for 2 years and 1 member of each group shall be appointed for 3 years. At the end of the initial appointment, all terms shall be for 3 years. The chairperson shall be selected from among the voting members of the council.

(4) The department shall provide qualified administrative staff and the state planning and development regions shall provide qualified technical assistance to the council.

(5) The council shall develop and present to the state transportation commission for approval within 90 days after the date of the first meeting such procedures and requirements as are necessary for the administration of the asset management process. This shall, at a minimum, include the areas of training, data storage and collection, reporting, development of a multiyear program, budgeting and funding, and other issues related to asset management that may arise from time to time. All quality control standards and protocols shall, at a minimum, be consistent with any existing federal requirements and regulations and existing government accounting standards.

(6) The council may appoint a technical advisory panel whose members shall be representatives from the transportation construction associations and related transportation road interests. The asset management council shall select members to the technical advisory panel from names submitted by the transportation construction associations and related transportation road interests. The technical advisory panel members shall be appointed for 3 years. The asset management council shall determine the research issues and assign projects to the technical advisory panel to assist in the development of statewide policies. The technical advisory panel's recommendations shall be advisory only and not binding on the asset management council.

(7) Beginning October 1, 2003, the department, each county road commission, and each city and village of this state shall annually prepare and publish a multiyear program, based on long-range plans, and developed through the use of the asset management process described in this section. Projects contained in each local road agency's annual multiyear program shall be consistent with the goals and objectives of the local road agency's long-range plan. A project, funded in whole or part, with state or federal funds, shall be included in any local road agency's multiyear plan.

(8) Funding necessary to support the activities described in this section shall be provided by an annual appropriation from the Michigan transportation fund to the state transportation commission.

(9) The department and each local road agency shall keep accurate and uniform records on all road and bridge work performed and funds expended for the purposes of this section, according to the procedures developed by the council. Each local road agency and the department shall annually report to the council the mileage and condition of the road and bridge system under their jurisdiction and the receipts and disbursements of road and street funds in the manner prescribed by the council, which shall be consistent with any current accounting procedures. An annual report shall be prepared by the staff assigned to the council regarding the results of activities conducted during the preceding year and the expenditure of funds related to the processes and activities identified by the council. The report shall also include an overview of the activities identified for the succeeding year. The council shall submit this report to the state transportation commission, the legislature, and the transportation committees of the house and senate by May 2 of each year.

This act is ordered to take immediate effect.

Gary E Randall

Clerk of the House of Representatives.

Carol Morey Viventi

Secretary of the Senate.

Approved _____

_____

Governor.

LETTER OF AGREEMENT

FOR JOINTLY TESTING AND EVALUATING ASSET MANAGEMENT AND GASB-34 CONCEPTS

Between the
County Road Association of Michigan
and
the Michigan Department of Transportation

Recent discussions between the County Road Association of Michigan (CRAM) and the Michigan Department of Transportation (MDOT) have resulted in an opportunity for both agencies to jointly test and evaluate various asset management and GASB-34 concepts in order to satisfy mutual transportation interests. One element of this mutual interest is the evaluation of existing methodologies concerning infrastructure asset evaluation and management. The purpose of this Letter of Agreement (LOA) between CRAM and MDOT is to describe the procedures for an asset management pilot program and prototype study to jointly collect roadway condition data on selected roads in designated counties, selected to represent a cross-section of Michigan roadway infrastructure. Additional roads and bridges may be covered upon mutual agreement of the individual participating counties and MDOT. Individual agreements between MDOT and participating county road commissions to provide detailed coordination for the pilot program and prototype study are recommended.

The purpose of this effort is the development and testing of working asset management guidelines for collecting, storing, reviewing, and analyzing roadway and bridge condition data, at a minimum, for the federal aid eligible system in participating counties. Working cooperatively, participating county road commissions and MDOT will collect pavement and roadway condition data using the PASER rating system and the Michigan Information Center's framework GIS transportation base map.

The costs associated with this pilot study and the prototype effort will be indirect only. MDOT will provide appropriate staff, GPS equipment, GIS software, PASER training videos and manuals, and requisite vehicles. The county road commission agencies will provide qualified staff to be available to rate the roadway condition and participate in the review and analysis of the data collected.

A rating team for each county will be established consisting of members of the participating county road commissions and MDOT. Coordination with the metropolitan planning team by the participating road commission shall occur when appropriate. MDOT shall effect the requisite coordination with other MDOT agencies (e.g., MDOT region offices and local TSC). The team shall establish working schedules, protocols, analyze and evaluate the data collected, and address any practical or technical matters as they might arise. The team shall produce a roadway evaluation report similar to the sample attached. The rating team should also include representation from the Local

Technical Assistance Program when appropriate. For planning purposes, an example of the work plan for data collection is attached.

The data to be collected should be compatible with the RoadSoft management system. Data collection procedures will be established by the rating team in accordance with existing systems to ensure standardization of data and to ensure that each agency can report their condition data consistent with the requirements specified in GASB Statement 34. The data gathered should also be appropriate for long-term planning and project specific development.

The data collected will be accessible to all parties for purposes of evaluation and analysis in order to prepare a joint report. Both parties consistent with procedures developed by the joint rating team, as it relates to current conditions, will analyze data. Regular status reports on the progress of this project will be provided to CRAM and MDOT.

A tentative schedule for this project is attached. Final reporting on the results of this pilot and prototype effort will be developed cooperatively between the participating road commissions and MDOT. Upon completion of this effort, a compilation of the results from all the participating road commissions will be presented to the Board of Directors of CRAM and the Michigan Transportation Commission. The results of the effort shall not be released without the advance approval of the participating parties.

CRAM will coordinate the scheduling of designated counties that participate in the effort. The County Road Association of Michigan and the Michigan Department of Transportation will each identify a contact person to assist and coordinate this effort. The CRAM Point of Contact will coordinate the scheduling of rating a participating county's roadway infrastructure. A preliminary schedule is attached.

Gregory J. Rosine, Director
Michigan Department of Transportation

Date: 9/26/01

John D. Niemela, Director
County Road Association of Michigan

Date: 10/1/01

Attachments

PASER - Demonstration Study for Counties - Work Plan for Data Collection

1. Prep Work (requires 2-4 days)
- Establish scope of study
    - Federal-aid
    - Act 51 Certified Roads
- Coordinate first meeting and tentative work schedule with study participants
    - County Road Commission staff
    - MDOT staff including the Region and TSC
    - Local Planning Agencies and/or City personnel
- Preparation of GIS database
    - Prepare county framework file
        - Reduction of segments
        - Define data fields
        - Prepare work plots
        - Load start database on laptops
- Test GPS equipment and GIS software with start database

2. Meet with participants of study (3-4 hours)
    - Introductions
    - Review of study and expectations
    - Training
        - PASER training (videos and manuals)
        - Maptitude training (GIS basics)
        - GPS training (use with field computer)
- Establish Study Teams
        - 3 to 4 individuals per team
        - Maintain at least one person from each organization per team
        - Finalize work schedule

3. Data collection (3 - 15 days)
    - Begin each day at an agreed starting point to discuss the day's strategy
    - Collect data on trunkline, Federal-aid and county roads in database
    - End each day at an agreed location
        - Review and map the day's accomplishments
        - Backup database

4. Synthesis of database (5-10 days)
    - Combine databases from each study team
    - Map and display results
    - Prepare report

5. Meet with participants of study (2-4 hours)
    - Report findings and results of study
    - Provide maps and final database to county

BUDGET FY 03

CATEGORIES	RATE	SOURCE	AMOUNT
TRAINING/EDUCATION		LTAP estimates	**$25,000**
MEETINGS	$710 per meeting x 24	Actual costs of Act 51 Study Committee	**$17,040**
TRAVEL	$76.25 x 15 x 24	MDOT Travel Rates of $76.25/day/member/staff	**$27,450**
POSTAGE AND UPS		Based on current STC budget	**$200**
OFFICE SUPPLIES AND PRINTED MATTER		Based on current STC budget	**$2,000**
MANUALS/SUBSCRIPTIONS/ PUBLICATIONS	Between $25 & $300/copy	Based on BTP purchases	**$5,000**
DATA COLLECTION	$17.54 per mile x 39,360 miles	Actual costs from MDOT Sufficiency Collection	**$700,000**
DATA COLLECTION: EQUIPMENT	$4,300 per region x 15 regions	Actual costs from pilot project	**$74,500**
DATA COLLECTION: VEHICLE COSTS	$.30 per mile	Actual costs from pilot project	**$12,000**
DATA SERVICES	$41,000 x 3 studies	Based on current contract with Deighton Associates	**$123,000**
DATA AGENCY ACTIVITIES		Based upon costs to store/process/analyze Sufficiency	**$100,000**
DEVELOP MULTI-YEAR PROGRAM		Based upon costs to develop MDOT 5-Year Program	**$600,000**
PRINTING: ANNUAL REPORT	$2.35 per copy x 1000	Actual costs to print Facts & Figures	**$2,350**
PRINTING: MULTI-YEAR PROGRAM	$2.35 per copy x 1000	Actual costs to print Facts & Figures	**$2,350**
TOTAL			**$1,690,890**

October 22, 2002, the Transportation Asset Management Council passed this budget on a vote of 10-0.
October 24, 2002, the State Transportation Commission passed this budget unanimously.

BUDGET FY 04

CATEGORIES	RATE	SOURCE	AMOUNT
TRAINING		LTAP estimates	**$25,000**
MEETINGS	$710 per meeting x 24	Actual costs of Act 51 Study Committee	**$17,040**
TRAVEL	$76.25 x 15 x 24	MDOT Travel Rates of $76.25/day/member/staff	**$27,450**
POSTAGE AND UPS		Based on current STC budget	**$200**
OFFICE SUPPLIES AND PRINTED MATTER		Based on current STC budget	**$2,000**
MANUALS/SUBSCRIPTIONS/PUBLICATIONS	Between $25 & $300/copy	Based on BTP purchases	**$5,000**
DATA COLLECTION	$17.54 per mile x 39,360 miles	Actual costs from MDOT Sufficiency Collection	**$700,000**
DATA COLLECTION: EQUIPMENT			**$10,000**
DATA COLLECTION: VEHICLE COSTS	$.30 per mile	Actual costs from pilot project	**$12,000**
DATA SERVICES	$41,000 x 3 studies	Based on current contract with Deighton Associates	**$123,000**
DATA AGENCY ACTIVITIES		Based upon costs to store/process/analyze Sufficiency	**$100,000**
DEVELOP MULTI-YEAR PROGRAM		Based upon costs to develop MDOT 5-Year Program	**$600,000**
PRINTING: ANNUAL REPORT	$2.35 per copy x 1000	Actual costs to print Facts & Figures	**$2,350**
PRINTING: MULTI-YEAR PROGRAM	$2.35 per copy x 1000	Actual costs to print Facts & Figures	**$2,350**
TOTAL			**$1,626,390**

On October 22, 2002, the Transportation Asset Management Council passed this budget on a vote of 10-0.
October 24, 2002, the State Transportation Commission passed this budget unanimously.

NOTES: DRAFT BUDGET
TRANSPORTATION ASSET MANAGEMENT COUNCIL

TRAINING/EDUCATION: Each year it will be necessary to conduct a number of training sessions for those individuals who will be rating the condition of the roads. The budget assumes that one crew of three individuals will be trained in each planning region and two crews in SEMCOG. In addition to training, the Council believes it is essential that an education program regarding the requirements of Public Act 499 be established so that local agencies are well aware of what is required of them under the law.

< The training would result in between 45 and 50 individuals the first year.
< The training would take place at 14 sites around the state, one in each region.
< The budget assumes that we would use MDOT facilities where possible but also provides for the possibility of having to rent a room for half of the sessions.
< Each session would take about 4 hours to complete and would consist of 2 trainers. The budget includes monies for their travel, food and overnight expenses.
< Training would be handled by the Local Technical Assistance Program (LTAP) operated by Michigan Tech.
< The proposed budget request is based upon numbers provided by LTAP staff and was increased to $25,000 by the Council to include funds for and educational outreach program. The staff will develop a communications plan outlining this program and present it to the Council for consideration and approval at their December meeting.

MEETINGS: The TAMC will need to meet at least monthly, for probably the first six months. Also, there will likely be subcommittee meetings for the first few months.

< The proposed budget is based upon the actual costs for the meetings of the Act 51 Funding Study Committee.
< They met 24 times at a cost of $17,032.39, or $709.68 per meeting.
< This cost includes:
- Room rental
- audio/visual rental and
- food

< Costs do not include the use of a court reporter as was done with the Act 51 Funding Study Committee.
< The TAMC will use tape recorders and staff will prepare summaries of the meetings from the tapes.
< Assuming 24 meetings at $710 per meeting, the budget request is for $17,040.

TRAVEL: The travel budget is based on the maximum per diem rate allowed to MDOT staff for in-state, non-select cities travel.

< It is at a rate of $76.25 per day.
< The budget assumes that there will be 24 meetings and provides funding for the 11 members of the committee and up to 4 support staff.
< $76.25 x 24 x 15 = $27,450. This figure was used for estimating purposes. Members would be reimbursed for actual expenses.

POSTAGE/UPS: The Council will need to mail out agendas and materials for meetings.

< The budget is based upon similar mailings for the State Transportation Commission for the first year.
< Subsequent years will be based upon actual costs incurred by the TAMC from

previous years.

OFFICE SUPPLIES: Basic office supplies would include such things as paper for printing; tapes and tape recorder for meetings; notebooks; name plates; cost of copying agendas/materials, etc.

< The budget uses figures for similar costs from the State Transportation Commission budget.
< Future budgets will be based upon actual costs from previous years.

MANUALS/SUBSCRIPTIONS/PUBLICATIONS: Much of the design for the legislation and "pilot project" came from reviewing several manuals and publications from countries that have been engaged in asset management for many years.

< These include: Canada, New Zealand, Australia, and the Organisation For Economic Co-operation And Development.
< These manuals present best practices in asset management and provide outstanding means of bench marking.
< While we currently have single copies of these manuals and publications, it is anticipated that members of the Council may also want copies.
< Costs range from $25 to $300.

DATA COLLECTION: This is the heart of the asset management process and constitutes the largest single cost. The budget amount is based upon actual costs were incurred in FY 2000 for MDOT's Sufficiency collection process. That cost was $5.846 per mile per person.

< This cost reflects a crew of 3 per vehicle including a driver, a navigator, and a rater.
< The cost per mile is $17.54.
< Costs include the time to rate the roads, meals/lodging, and processing the data after its collected.
< The per mile cost is then applied to the 2001 certified federal-aid eligible mileage of 39,360 miles, for a total of $690,374.
< The total requested has been increased to $700,000 to deal with unexpected events such as inclement weather which would require additional days in the field.

DATA COLLECTION/EQUIPMENT: In order to collect the data, each vehicle must be equipped with the following:

- One PC Notebook at $3,000 a piece
- One GPS receiver at $300 a piece
- Software at $500 a piece and
- Light Bar at $500 a piece.

< There are 14 planning regions. Each region would be responsible for overseeing the collection of data in its jurisdiction and the development of the multi-year programs by the local road agencies.
< There would be an additional crew for the SEMCOG area to expedite the collection process. With 2 crews, data in SEMCOG can be completed in 39 working days. With only 1 crew it would take over 77 working days or 15 weeks.
< The FY 2003 budget amount reflects new purchases for the initial year. Then in the 4th year's budget we would begin a regular cycle of replacing 1/3 of the equipment each year.
< $4,300 x 15 = $64,500.
< The budget also reflects an amount of $10,000 for maintenance and emergencies. The FY 2004 budget has only $10,000 in it for maintenance

and emergencies.

DATA COLLECTION/VEHICLES: While it is essential to have a sufficient number of vehicles in order to collect the data, the budget does not include funds for the purchase of vehicles only operating costs.

< Based upon the operating costs incurred during the pilot project a cost of $.30 per mile is assumed in this budget.
< $.30 x 39,360 = $11,808. The requested amount has been rounded up to $12,000.

DATA SERVICES: As asset management has grown in usage new software is being developed which allows for more sophisticated analyses. Some of these programs are suitable for large agencies and some are more suitable for smaller agencies.

< This budget item would be used to test software and provide member agencies with an analysis of the software relative to their asset management and GASB 34 needs.
< Also, many agencies use other data collection and strategic analysis software such as RoadSoft, MicroPaver, RQFS and others. It will be necessary to test the results of the PASER ratings with ratings from these other methods so that local agencies can be assured that what the Council is seeing is compatible with the systems they are using to develop their projects.
< Also, there is still a lack of suitable models that quantify the benefits of asset management activities. Developing such models is a top priority of the AASHTO Task Force on Asset Management. As these models become available we will want to test their applicability to Michigan's process.
< The Bureau of Transportation Planning currently has a 90 day contract with Deighton Associates to test the applicability of their dTIMS CT model using PASER data. The cost of this contract is $41,000. The requested budget is based on this amount and would include up to 3 such studies during the year for a total of $123,000.

DATA AGENCY ACTIVITIES: The legislation requires that an independent agency be contracted with to store, process, and analyze the data that has been collected.

< This line item represents the funds needed for those activities.
< The budget is based on what it costs the department to store, process, and analyze the Sufficiency data.
< The PASER process is identical to the Sufficiency process.

DEVELOPMENT OF MULTI-YEAR PROGRAM: The legislation requires the development of an annual Multi-Year Program.

< The proposed budget is based on the FY 2003 SPR budget at MDOT for the maintaining and updating of the annual program.
< This cost is estimated to be $600,000 for FY 2003.

PRINTING/ANNUAL REPORT: The legislation requires the Council to publish an annual report that is to be distributed to the STC, Governor and the transportation committees of the House and Senate.

< The proposed budget is based upon the department's budget for printing the annual Facts & Figures document and assumes printing 1,000 copies.
< The 1,000 copy figure is based on 534 cities, 83 counties, 14 planning regions, 150 for the legislature, 25 for the TAMC/STC, 25 for Governor's office (totals 831).
< The cost to publish the Facts & Figures document was $2.35 per copy.

< $2.35 x 1000 = $2,350.

PRINTING/MULTI-YEAR PROGRAM: The legislation also requires the publishing of a multi-year program on October 1 of each year.

< The proposed budget is based upon the department's budget for printing the annual Facts & Figures document and again assumes printing 1,000 copies.

< $2.35 x 1000 = $2,350.

NOTE: This budget does not reflect any costs for wages and fringe benefits for MDOT staff, except for the costs of collecting the data. All administrative support activities by MDOT staff will be covered within existing budgets.